Policy Brief

Synthesising research evidence to inform policy

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Developmental Language Disorder – a public health problem?

Developmental Language Disorder (DLD) is a condition where a child has difficulties understanding and/or producing language and these difficulties impact on their everyday life.

Approximately 5 to 8 per cent of children may have DLD.[1,2] Studies suggest DLD is as prevalent as childhood obesity, reported to be 7 per cent in Australia.[3]

In population-based studies, which use broader criteria for DLD, prevalence estimates are even higher, with some studies reporting 14 to 20 per cent of 4-5-year-old children may be affected by DLD. Similar levels are also reported at 7 years of age. [4,5,6]

What is a public health problem?

Is DLD a public health problem? For a health condition to be considered a public health problem, the following criteria must be met:[7,8]

- **It must place a large burden on society**, a burden that appears to be increasing.
- **The burden must be distributed unfairly** (i.e. certain segments of the population are unequally affected).
- There must be evidence that early **preventive strategies could substantially reduce the burden of the condition.**

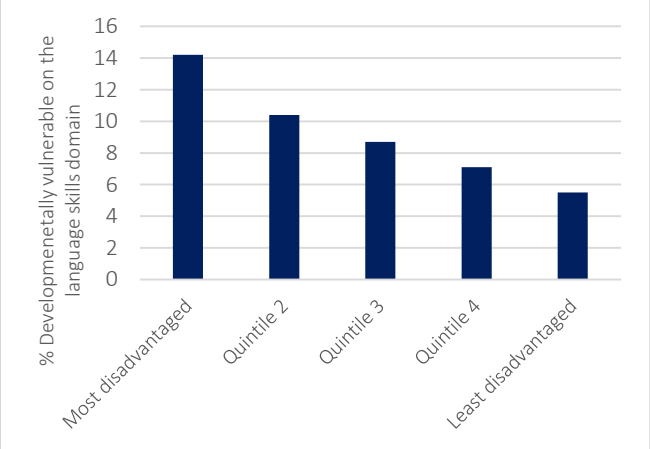
The societal burden of DLD

- In Australia, there has been a major increase in the number of speech pathology service claims made to Medicare, Australia's publicly funded universal health care system. The speech pathology Medicare service items increased from 3,051 in 2004-05, to 115,167 in 2012-13, with majority of services for children aged 0-14.[9]
- Early language problems are shown to be associated with externalising (e.g. physical aggression) and internalising (e.g. anxiety) mental health problems.[10] Children are often identified with either a language or a behaviour problem although in reality these difficulties often co-occur,[11] accentuating the difficulties the child experiences in school.[12] This overlap between behaviour and language often goes undetected by teachers or psychologists[13] and children are more likely to be referred to services because of concerns about their behaviour than because of concerns about language skills.[10] There are also potential long-term consequences with evidence to suggest childhood DLD is associated with adult mental health problems.[14,15] The increased risk of behavioural difficulties for children with persistent DLD puts them at risk of exclusion, potential criminal activity and mental health problems, escalating the already substantial costs to government spending on special education needs.[16]
- Language is an essential foundation for educational progress. Crucially, the transition to literacy in the first three years of school will not be successful without well-established language skills. Children with DLD are likely to struggle with this transition and their academic and vocational trajectories are significantly curtailed. Leaving school without the skills required for employment or further training predisposes children to a life on the social and economic margins. This is a particular issue for young males, for whom unskilled jobs are disappearing as labour-markets are increasingly reliant on technology and higher levels of education.[17] Low literacy levels impose a range of direct and indirect costs on governments, industry and communities[18] and difficult to rectify.

The unfair distribution of DLD

The burden of DLD is distributed unfairly: more socially disadvantaged children are likely to have poorer developmental skills than their more advantaged peers.[19,20] In a national report using data from the Australian Early Development Census (AEDC), which measures the development of children in Australia in their first year of full-time school (around 5 years of age), a linear relationship was found between social disadvantage and child language skills. In 2015, children from the most disadvantaged areas were shown to be three times more likely to be developmentally vulnerable than children from the least disadvantaged areas (see Figure 1).

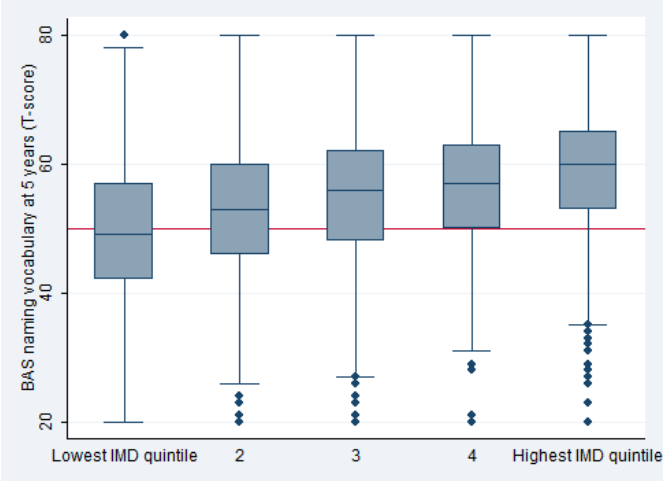
Figure 1: Social gradient in oral language skills amongst 5-6 year-old children on the Australian Early Development Census (AEDC) in 2015



A similar pattern emerges when examining data from the UK's Millennium Cohort Study. Figure 2 shows the BAS naming vocabulary scores (language ability) by each quintile

of the Index of Multiple Deprivation (IMD), which is an English measure of relative deprivation for small areas. While the range of oral language skills is comparable across each of the five quintiles of the IMD for children in the cohort at 5 years of age (n=11,000), the averages rise markedly across the distribution.

Figure 2: Social gradient in oral language skills amongst 5-year-old children in the Millennium Cohort Study in the UK



Figures 1 and 2 suggest the prevalence of DLD increases as the level of social disadvantage increases. This is consistent with the findings from two other UK studies looking at language levels of young children from the most disadvantaged areas. Locke and colleagues[21] reported 50 per cent of 4-year-old children in nursery (preschool) in very disadvantaged areas of Sheffield, UK were in the lowest Index of the Multiple Deprivation quintile and had low language. This figure dropped to 30 per cent by 5 years of age. Law and colleagues[22] reported similar findings for a school population in Edinburgh, UK.

Inequity of access to services

Access to services is not equitably distributed. It is not easy for all children to access the services they need and it is often families who are most in need of services who access them the least.[23] Barriers to accessing health services reported by vulnerable families include cost, as well as availability and accessibility of health services.[24,25] Not only are there financial barriers to access, but more socially advantaged parents are more likely to have the skills and knowledge based on their education and experience to be resourceful and access the services they need.[26]

Another factor exacerbating these inequities is a tendency for areas of greater disadvantage to have fewer services. An Australian study by Reilly and colleagues[27] mapped the distribution of speech pathology services across metropolitan Melbourne and examined the level of need in these areas according to language vulnerability and social disadvantage. Findings revealed there were three times as many private speech pathology services (requiring the client to pay a fee) as there were public (free) services for 0-5-year-olds and overall, poorer availability of services in some of the most vulnerable areas. Governments need to consider the complexities around access to services when attempting to address inequalities in child development.

In an attempt to reduce the educational gap in the UK, the government introduced free early childhood education places for the most disadvantaged children at 2 years of age.[28] Despite this, almost a third of the children eligible for free early education have not been taking up these places, so the opportunity to potentially improve the developmental outcomes of the most vulnerable children is missed.[29] This highlights both the restricted availability of some services as well as the potential barriers to service access even when they are available. Barriers may also include the fear of stigmatisation, a lack of understanding of the importance of the services or low parental language/literacy. These barriers need to be identified in order to improve uptake from families who would most benefit from these services.

Public health services in the UK and Australia

Recent practice surveys in the UK and Australia suggest public health approaches to services for children with DLDs are well established in some areas.[30,31] For example, in the UK half of the local authorities indicated that they had services in place for 0-3-year-olds.[30] When asked about their services, it was clear that some speech and language services are starting very early in a child's development. Similarly in Victoria, Australia, a practice review showed that many language promotion programs and strategies are currently being used to enhance language outcomes in 0-3-year-olds.[31]

In the UK, public health activities include:

- training health visitors (equivalent to public health or community child health nurses in other countries) and other members of the early years workforce;
- developing screening and surveillance programmes;
- shaping public health messages;
- promoting family literacy; and
- developing Communication Champion Training and building capacity in local communities to help parents support their children's development.

Speech and language therapists in the UK reported using a number of key public health messages, which included encouraging parents to engage in more talking, playing, singing and book reading with their children, as well as restricting the use of TV and not using dummies (pacifiers)

for extended periods. Similarly, the most common language promotion strategies reported by Australian early childhood educators and allied health professionals were: reading and books; conversation and promoting everyday language; parent capacity building (including individual advice, modelling and coaching); play; and music, singing, and rhyme.

This suggests that in both the UK and Australia public health strategies are starting to be put in place. However, while such strategies may be in place in many areas, there has been little work evaluating their impact at a public health level.

Evidence of "upstream" preventive services

Upstream preventive services are services which attempt to address a problem (e.g. DLD) through prevention, rather than treatment. Underlying the development of public health services designed to meet the needs of children with DLDs is the need for an intervention evidence base. Much has been written about the evaluation of interventions to promote child social and emotional development in general[32] and about interventions to promote the language skills of young socially disadvantaged children.[33] Most of the intervention studies concerning DLDs have been carried out by specialist clinicians and could be described as 'targeted- indicated' interventions whereby children are identified by a diagnostic process prior to attending the service.[34] By contrast, a more recent review specifically identified interventions which included both universal (the whole population) and 'targeted-selective' interventions – i.e. where a subset of the population was deemed to be 'at risk' and therefore received the intervention, usually for reasons of socio-economic disadvantage.[35]

A rapid review aimed at identifying programs shown to promote children's language development (0-3-year-olds) found 10 of the 17 programs identified as 'best practice or promising' were parent capacity-building interventions.[31] Interventions included universal and selected-targeted populations, in which parents were trained to support their child's language, pre-literacy skills or general child development. Particularly in the early years, interventions that acknowledge and enhance the role of parents in their child's language learning are more likely to achieve better outcomes.[36]

It is important to note that, while many of these interventions have been developed and a number have been shown to be effective with relatively small groups of children, there is an urgent need to better understand how some of these interventions work when applied to the broader population. The risk is that, as has been the case in other health areas, universal interventions may have a more positive effect on more advantaged children.[37, 38]
An alternative is to provide a gradation of services according to need – also known as 'proportionate universalism'.[39] There is a useful distinction to be drawn between truly universal services that are equally available to everyone, services which are targeted to a specific subpopulation (targeted-selective), and those which are delivered according to individual need (targeted-indicated).[32] Determining the best mix of these approaches across a population and designing tools to support appropriate targeting are key priorities for future research.

Implications and recommendations

Researchers from low to high income countries have called for DLD to be considered a public health problem.[40-42] DLD meets the criteria for a domain that fits within a public health framework as it places a large burden on society, is distributed unfairly, and there is evidence that upstream preventive strategies could reduce the burden of DLD if population health approaches are taken. It is therefore recommended that coordinated efforts across policy and practice be made to:

- ensure professionals and parents understand the importance of child language development
- increase knowledge of DLD prevalence rates and access to services in different communities to build understanding of the issues raised, specifically for more socially disadvantaged communities
- ensure that the issues outlined in this Policy Brief become a key element of the pre-registration training of speech and language therapists/pathologists and all early years practitioners. There is a good case for developing a postgraduate Public Health Child Development Specialist role to take these issues forward
- ensure that those responsible for delivering services map the characteristics of their populations to the needs of those that use them
- ensure that speech pathologists work closely with early years services to maintain a clear focus on child language as a priority and to facilitate the use of the best available evidence to inform the public health messages and approaches implemented
- ensure that the evidence base is strengthened with teams of early years practitioners, language specialists and researchers working together to evaluate the effectiveness of interventions and services working to strengthen children's language development, broader child development and wellbeing
- determine the best mix of universal targeted-indicated or targeted-selective approaches across a population, design tools to support appropriate targeting and assess their impact on young children over the short and longer term.

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About us

The Centre of Research Excellence in Child Language is a collaboration of child language experts from the Murdoch Childrens Research Institute and Griffith, Newcastle (UK), Deakin and La Trobe Universities. It uses the latest approaches in molecular genetics, neuro-imaging, epidemiology, biostatistics and health economics to investigate factors that affect and improve child language and development.

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